ENGINEERING ALUMNI NEWS

UNIVERSITY OF TORONTO
FACULTY OF APPLIED SCIENCE AND ENGINEERING
VOLUME 23 • NUMBER 2 • SEPTEMBER, 1976

A most enjoyable Engineering Spring Reunion was held on Friday, June 4, 1976, in the Grand Ballroom of the Sheraton Centre. The reception, dinner and presentations moved quickly, paced by the enthusiasm of special guest Walter Amos OT6 and the enthusiastic representatives from the honoured years 1T6, 2T6, 3T6 and 5T1.

Spring Reunion Recap

The evening was highlighted by the presentation of the 2T5 Meritorious Service Award Medal to Owen E. Maynard 5T1 and by a brief musical interlude, courtesy of the triple prize-winning Lady Godiva Memorial Band.

The organization efforts of Stewart Halliday and his committee deserve our special thanks for planning this most successful and enjoyable event.

Advance Notice *Triennial '76* Centennial Room
Inn on the Park
October 16, 1976

Engineering Alumni News

PUBLISHED BY
THE ENGINEERING ALUMNI ASS'N
OF THE
UNIVERSITY OF TORONTO

President .... *G. R. Gross*
Secretary .... *J. T. Horn*

The Engineering Alumni News is edited and produced by the Publicity Committee of the Engineering Alumni Association

Chairman — Steve Field
Co-Chairman — Mike Cox

ALUMNI HOUSE, UNIVERSITY OF TORONTO
TORONTO, ONTARIO M5S 1A1

DESIGN OF PRESSURE VESSELS AND DESIGN OF PRESSURE PIPING

These courses are intended for graduate or professional engineers in the process, power and nuclear engineering fields.

THE INSTRUCTOR

The instructor in both courses will be Mr. G. Forrest, a senior design engineer with Canatom (Ontario) Ltd.

PLACE AND TIME

The course will be held in the Mechanical Engineering Building on the St. George Campus of the University of Toronto, and each will consist of twenty two-hour sessions, ten in the Fall of 1976 and ten in the Spring of 1977.

Classes will be from 7:00 to 9:00 p.m. Design of Pressure Vessels on Mondays and Design of Pressure Piping on Thursdays, and will commence in the weeks of 27 September, 1976, and 10 January, 1977.

FEES AND REGISTRATION

The fee for each course of twenty sessions is $180, and this includes full printed lecture notes. The purchase of text books will not be necessary.

Fees must be paid in advance and cheques or money orders should be made payable to the University of Toronto. Fees are not returnable.

Registration in each class will be restricted to thirty students; early application is therefore advisable.

PRESSURE PIPING DESIGN

The major topics covered will be:

- Descriptions of main piping systems in modern power stations
- Introduction to ANSI Code 31.1
- Sizing of pipes
- Factors affecting choice of pipe line materials
- Pipe bend flexibility
- The grapho-analytical and general analytical methods of determining stresses and deflections in pipelines
- Introduction of torsion members, of members having different "I" values and of members in both bending and torsion.
- The 3-plane 2-anchor system
- The 3-anchor piping system
- Flange design
- Pressure loss in steam and feed systems
- Piping supports
- Extension of stress analysis methods to deadweight and support loading
- Creep of piping
- Choosing the right valve
- Vibration and noise
- Expansion joints
- Welding, preheating and stress relieving
- Techniques of inspection and site evaluation

PRESSURE VESSEL DESIGN

The major topics covered will be:

- Design of pressure vessels subject to pressure and thermal stress
- Fatigue design
- Comparison of ASME III and VIII Divisions 1 and 2 codes
- Manufacture, fabrication and testing techniques
- Creep in pressure vessels
- Brittle fracture
- Mechanical design of heat exchangers
- Design of flanges and pressure vessel heads
- Corrosion of pressure vessel materials
- Notes on concrete pressure vessels
- Design of pressure vessel supports

Further information may be obtained from
Mrs. S. DesLauriers
Office of the Dean
Faculty of Applied Science and Engineering
University of Toronto
35 St. George Street
Toronto, Ontario M5S 1A4
Tel. (416) 978-3119

OPERATIONAL RESEARCH

The program of courses listed below will be offered in 1976/77 in cooperation with the CANADIAN OPERATIONAL RESEARCH SOCIETY which will issue a certificate to those completing the program.

1. Probability Theory
2. Mathematical Statistics for the Operational Researcher
3. Introduction to Operational Research
4. Introduction to Mathematical Programming
5. Topics in Mathematical Programming
6. Simulation
7. Introduction to Stochastic Processes
8. Decision Analysis
9. Operations Planning and Control
10. Applications of Operational Research

Full credit will be given for courses completed in the earlier program as well as for equivalent courses taken elsewhere.

For further information please apply to:
Dr. A. A. Cunningham
Department of Industrial Engineering
University of Toronto
(416) 978-2923

School of Continuing Studies
University of Toronto
119 St. George Street
(416) 978-2400

EVENING COURSES IN CHEMICAL, CIVIL, ELECTRICAL AND MECHANICAL ENGINEERING

Successful completion of these courses gives exemption from the examinations of the Association of Professional Engineers of the Province of Ontario, as indicated. These courses are also open to students who are not A.P.E.O. candidates.

PROFESSIONAL EXAMINATIONS COMMON TO ALL BRANCHES

Exam No.	Title
0.2.1	Professional Practice
0.2.2	Engineering Economics, Law, Management and Specifications

CHEMICAL ENGINEERING

2.1.5	Transport Phenomena
2.1.6	Process Dynamics and Control
2.1.7	Chemical Technology, Design and Economics

CIVIL ENGINEERING

3.0.2	Elementary Structural Design
3.0.5	Hydraulic Engineering
3.1.8	Highway Design and Construction

ELECTRICAL ENGINEERING

4.0.3	Electronics
4.0.4	Control Systems
4.1.5	Power Systems

MECHANICAL ENGINEERING

6.0.1	Thermodynamics and Heat Transfer
6.0.5	Application of Electrical Principals
6.1.4	Materials, Processes and Equipment

The lecturers in the above courses will be members of the Faculty of Applied Science and Engineering who teach related courses in the day time program. Each full course comprises twenty two-hour sessions which will be held from 7:00-9:00 p.m. on the St. George Campus. 0.2.1 will consist of ten sessions.

Information as to fees, texts, times, and place of registration will be contained in brochure form and will be distributed by the School of Continuing Studies. Course descriptions may be obtained from the APEO, 1027 Yonge Street, (416) 961-1100.

Further information may be obtained from:
School of Continuing Studies,
University of Toronto,
158 St. George Street,
Toronto, Ontario, M5S 2V8
(416) 978-2400

OWEN E. MAYNARD AWARDED CLASS OF 2T5 MID-CAREER MEDAL

Engineering Alumni Association President Paul Walters (left) reads citation to Owen Maynard

Owen E. Maynard was chosen by his colleagues of the class of 1951 to receive the 2T5 Meritorious Service Medal of the Engineering Alumni Association. He received the award at the Engineers' Spring Reunion on Friday, June 4th.

After graduating from U of T, Mr. Maynard worked for A. V. Roe Canada until 1958. While at A. V. Roe he was involved in various aspects of the Avro Jetliner, the CF 100, the CF 105, and conducted investigations into the conceptual design of advanced commercial jet aircraft, and large scale ground based radar dishes. During this time he was active in the Engineering Alumni Association as the aeronautical Engineering class representative.

In 1958 Mr. Maynard joined NASA. He became chief of the Apollo systems engineering division during the early development phase of the Apollo program, and was responsible for all technical matters relating to the design and development of the command, service and lunar modules and mission operations. During his distinguished career at NASA, Owen Maynard was awarded two exceptional service medals.

Mr. Maynard left NASA in 1970 spurred by his personal conviction that ways should be sought to employ the technical expertise developed by such advanced programs as the Avro Arrow and Apollo, in areas that would benefit those who had paid for such development. He joined the Raytheon Company where he is Manager of their space systems equipment division. He is currently studying the prospects of deriving energy from space.

Owen Maynard receives a model of the Avro Arrow from Dean Ben Etkin

THE 2T5 MERITORIOUS SERVICE MEDAL

of the

ENGINEERING ALUMNI ASSOCIATION

is hereby awarded to

OWEN E. MAYNARD (5T1)

For his outstanding contributions to the Canadian aircraft industry, and for his exceptional participation in the space exploration program, culminating in the NASA Apollo Project's successful landing of the first men on the moon, and their safe return to planet earth.

ENGINEERING ALUMNI ASSOCIATION
of the
Faculty of Applied Science & Engineering
University of Toronto

Special note to Class of 5T2

RE 2T5 MERITORIOUS SERVICE AWARD

The class of 5T2 will be one of the honoured years at the Spring Reunion in June 1977. It is not too soon to "Get the ball rolling" on nominations for the 2T5 Meritorious Service Award, which will be presented to a member of 5T2, chosen as outstanding, by the class.

Criteria pertaining to the award as follows:

a. Professional accomplishment in research and/or development; in technical activity; in management.
b. Advancement of interest of community in public and/or utility service; in industry; in education.
c. Contributions to the University community; to the Engineering Alumni Association; to the well-being or the profession.

Deadline for receipt of nominations is March 15, 1977, please send to

Mrs. M. Walker, c/o Alumni House,
47 Willcocks St.,
Toronto M5S 1A1

OPPORTUNITIES FOR PROFESSIONAL GROWTH

Mr. C. William Daniel, a U of T graduate in Mining Engineering 4T7 and currently the first Canadian President of Shell Canada, will discuss "Opportunities for Professional Growth", the need for graduates to dedicate themselves to high ethical and professional goals and to accept their responsibilities to the community at large.

TUESDAY, OCTOBER 5, 1976

1-2 P.M.

ROOM 3153

MEDICAL SCIENCES BUILDING

THE COMPUTER DESIGN OF FURNACES AND COMBUSTION CHAMBERS

The University of Toronto, Faculty of Applied Science and Engineering is presenting a short course in "The Computer Design of Furnaces and Combustion Chambers". Lecturers will be Dr. A. D. Gosman, Dr. F. C. Lockwood and Professor J. H. Whitelaw, all of the Imperial College of Science and Technology, London, England.

The course is intended for combustion design engineers, research workers in industry, government institutions and universities; and technical managers wishing to familiarize themselves with current predictive potential. It will be of interest to Professional Engineers in chemical processing plants, oil refineries; electricity generating stations; boiler manufacture; glass, steel and aluminum production; waste disposal plants, etc.

Lectures will be held from 8:30 a.m. to 6:30 p.m. on Monday, December 13, and Tuesday, December 14, 1976 in the Galbraith Building of the University. Fee for the course is $275 which includes full printed notes. Applications may be made in person at the Faculty Office, 35 St. George Street, or by contacting Mrs. S. DesLauriers, Office of the Dean, Faculty of Applied Science and Engineering, 35 St. George Street, Toronto, Ontario, M5S 1A4, Tel. (416) 978-3119.

TECHNOLOGICAL TEAM RESPONSIBILITIES

U of T, Seneca College and the APEO's Committee on Engineers in Education sponsor a one-day seminar on **Technological Team Responsibilities.** The seminar which is to be held on Wednesday, November 24th at the Finch Campus of Seneca College, provides a forum for discussion on recent trends which tend to diminish and remove the distinction in role, function and aspirations between technologists and engineers in industry. Tentative program consists of the following presentations:

Technological Team Responsibilities — the Legal Aspects — M. Trebilcock
The Community Colleges and the Training of Technicians and Technologists — S. Mitminger, P. Eng.
Technological Team Responsibilities — Views from the APEO and Universities — M. Patterson, P.Eng.
Technological Team Responsibilities — The Government Point of View — G. R. Gibson
The Engineering Team in Industry — G. M. McHenry, P.Eng.
Technological Team Responsibilities — The Industrial Viewpoint — W. Baker

In addition, a panel discussion is arranged for the afternoon of November 24th. For registration and further information contact Continuing Education Division, Seneca College, 1750 Finch Avenue East, Willowdale, Ontario, Tel. (416) 491-5050, extension 460.

PART TIME PROGRAM FOR MASTER OF ENGINEERING DEGREE

Offered by Electrical Engineering at University of Toronto

OBJECTIVE

The Master of Engineering Program in the Department of Electrical Engineering is intended for those who wish to pursue advanced study at the Master's level, with special emphasis on design and professional practice. It provides exceptional opportunities to up-date skills, establish an objective and a program to ensure it is accomplished, get formal recognition for your effort, react with your peers in an exciting and challenging atmosphere, and to take part in studies at the very frontier of knowledge while still employed.

FIELDS OF INTEREST

Biomedical Engineering; Communications; Computers; Electronic Devices, Circuits and Instrumentation; Power Devices and Systems; Systems Control; Wave Sciences.

ADMISSION

Persons normally enter this program after some pertinent engineering experience. A candidate should hold the degree of Bachelor of Applied Science of this university or a comparable degree in engineering with at least second class standing. For degree programs applications should be made before August 1st. Individual courses may be taken by a qualified applicant holding a Bachelor's degree as a Special Student (not proceeding to a degree).

ACADEMIC PROGRAM

The degree program consists of lectures, laboratories, seminars and an engineering project. Eight one-term graduate lecture courses with associated laboratory and project work will be required, as established in consultation with the student's staff supervisor. Individual programs can be arranged to make up any background deficiencies. Residence is not required and it is usually possible to arrange a program that will permit continuous employment with minimum disruption and still allow completion of the work within the required five years.

Course List and Inquiries

Professor A. J. Kravetz, Graduate Secretary,
Department of Electrical Engineering,
University of Toronto,
Toronto, Ont. M5S 1A4
Telephone — 978-8666

L.G.M.B.!

Now that we have your attention, you will be interested to know that the co-leaders of the one and only, world famous, triple-prize-winning Lady Godiva Memorial Band are compiling a written history of this illustrious organization. If you were a member, or better still, a leader, we would like to hear from you. Write down anything at all that you find memorable about the L.G.M.B. and send it along to

Robert Ketchen, L.G.M.B. Co-Leader
Engineering Annex, 2nd Floor
University of Toronto
11 King's College Rd.
Toronto, Ontario M5S 1A4

CENTENNIAL THESIS AWARDS 1976

Mr. Kim Douglas Pressnail, Civil Engineering
"The Design of Insulated Aircraft Runways in Permafrost Regions"
Mr. Richard J. Heystee, Geological Engineering
"The Affect of Stress on the Permeability of Rock Cores"
Mr. David Francis, Mechanical Engineering
"Contact Angle Phenomena on Heterogeneous Surfaces"
Mr. Richard Attilio Favro, Industrial Engineering
"The Design of a Prototype Medical Data Base for Patient Summary Records"
Mr. Norman Rappaport, Engineering Science
"An Experiment in Freeway Traffic, Modelling and Control"
Mr. David Noble Elliot, Chemical Engineering
"A Study of the Gas Phase Combustion of Methyl Alcohol"
Mr. Peter Thompson, Electrical Engineering
"The Digital Conversion of an Astronomical Telescope's Positional Readouts"
Mr. Lawrence Heaslip, Metallurgy and Materials Science
"An Investigation of Pouring Stream Systems"

ALUMNI HALL OF DISTINCTION FOR UNIVERSITY OF TORONTO ENGINEERS

A Hall of Distinction to honour past and present outstanding University of Toronto engineers will be built in the Galbraith Building. It will be officially opened in June 1977, during the University of Toronto's Sesquicentennial Year, at which time some of "School's Greats" will be installed.

The Dean's Hall of Distinction committee are seeking nominations from engineers in order to honour graduates of school who have given exceptional engineering service during their careers.

Nomination forms may be obtained from:
Prof. P. P. Biringer
Room G249, Galbraith Building
Toronto M5S 1A4

DEADLINE for receipt of nominations is DEC. 15, 1976. Let us honour outstanding school graduates!